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EQUIPMENT LEASING DEVICE USING PREPAID CARD
[Puripeido kado ni yoru kiki kashidashi sochi]

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[Claims] /2*

[Claim 1] An equipment leasing device using a prepaid card equipped with the following constituent elements.

[1] A case (10) equipped with a feed line (12) connected to an AC outlet and a front panel (14) including a slot (14a) for a prepaid card.

[2] A CPU (20) housed inside the case (10).

[3] A card sensor (30) for detecting a prepaid card inserted into the case (10) and for transmitting a detection signal to the CPU (20).

[4] A card processor (40) for recording leasing data on a prepaid card and returning or reclaiming the card when the inserted prepaid card has been received, the recorded data has been read and transmitted to the CPU (20) and equipment leasing has been completed.

[5] An operating switch (50) attached to the front panel (14) of the case (10), which is operated by the user and which transmits a control signal to the CPU (20).

[6] At least one piece of equipment to be leased (60), at least partially housed inside the case (10).

[7] A power control circuit (70) for activating the equipment to be leased (60) based on a command from the CPU (20) when a valid prepaid card has been accepted.

[Claim 2] The equipment leasing device using a prepaid card described in Claim 1, wherein there is a plurality of operating switches (50) and equipment to be leased (60).

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*Numbers in the margin indicate pagination in the foreign text.

[Claim 3] An equipment leasing device using a prepaid card equipped with the following constituent elements.

[1] A case (10) equipped with a feed line (12) connected to an AC outlet and a front panel (14) including a slot (14a) for a prepaid card.

[2] A CPU (20) housed inside the case (10).

[3] A card sensor (30) for detecting a prepaid card inserted into the case (10) and for transmitting a detection signal to the CPU (20).

[4] A card processor (40) for recording usage of a prepaid card (80) and returning or reclaiming the card when the inserted prepaid card has been received, the recorded data has been read and transmitted to the CPU (20) and the validity of the card has been verified by the CPU (20).

[5] At least one piece of equipment to be leased (60), at least partially housed inside the case (10).

[6] A power control circuit (70) for activating the equipment to be leased (60) for a predetermined period of time based on a command from the CPU (20) when a valid prepaid card has been accepted.

[Claim 4] The equipment leasing device using a prepaid card described in Claim 3, wherein the equipment to be leased (60) is an air mattress (64) with an attached air pump (62), wherein the air pump (62) is housed inside the case (10), and wherein the case (10) is equipped with a hose fitting (16) to supply compressed air to the air mattress (64).

[Detailed Description of the Invention]

[0001] [Technical Field of the Invention]

The present invention relates to a device that lends equipment for a fee using a prepaid card. Here, the equipment can be health care devices used in a hospital or nursing home, entertainment devices, or everyday items.

[0002] [Prior Art]

Many different types of equipment are leased for a fee in hospitals and nursing homes. These include health care equipment such as air mattresses and massage devices, entertainment devices such as televisions and radio cassette players, and everyday items such as kitchen utensils and small refrigerators. However, the current leasing method is to prepay for a set period of time such as a week. The calculation of fees is efficient from the standpoint of the user, and the process is cumbersome and not optimized for profits from the standpoint of the leasing vendor.

[0003] Coin-operated televisions and similar devices are currently in use, but the patient or health care provider always has to have the appropriate amount of change on hand in order to use them. There are many situations in which the patient or health care provider simply does not have enough change on hand to use them. Coin-operated leasing devices also experience problems with coil recovery and security. Air mattresses are often used in these facilities by health care providers to prevent bedsores in bedridden patients. These air mattresses are used around the clock until the user leaves the

facility. These items could be provided as rental units, but there is no efficient means for leasing out air mattresses for a fee. It would be very convenient if there were a simple and inexpensive means for leasing out these items.

[0004] [Problem(s) Solved By the Invention]

In light of this situation, the present invention provides a device that is able to simply and inexpensively lease out items such as air mattresses using a prepaid card. In this specification, a prepaid card can be a magnetic recording-type card, an IC card, a token card or any other type of card that allows a device to be operated for a fee.

[0005] [Means of Solving the Problem(s)]

In order to achieve this purpose, the present invention is an equipment leasing device using a prepaid card equipped with the following constituent elements: a case equipped with a feed line connected to an AC outlet and a front panel including a slot for a prepaid card, a CPU housed inside the case, a card sensor for detecting a prepaid card inserted into the case and for transmitting a detection signal to the CPU, a card processor for recording leasing data on a prepaid card and returning or reclaiming the card when the inserted prepaid card has been received, the recorded data has been read and transmitted to the CPU and equipment leasing has been completed, an operating switch attached to the front panel of the case which is operated by the user and which transmits a control signal to the CPU, at least one equipment to be leased at least /3

partially housed inside the case, and a power control circuit for activating the equipment to be leased based on a command from the CPU when a valid prepaid card has been accepted.

[0006] This purpose can also be achieved by an equipment leasing device able to lease out a particular item such as an air mattress for a predetermined period of time based on a soon-to-be-used-up prepaid card. In other words, the present invention here is an equipment leasing device using a prepaid card equipped with the following constituent elements: a case equipped with a feed line connected to an AC outlet and a front panel including a slot for a prepaid card, a CPU housed inside the case, a card sensor for detecting a prepaid card inserted into the case and for transmitting a detection signal to the CPU, a card processor for recording usage of a prepaid card and returning or reclaiming the card when the inserted prepaid card has been received, the recorded data has been read and transmitted to the CPU and the validity of the card has been verified by the CPU, at least one piece of equipment to be leased at least partially housed inside the case, and a power control circuit for activating the equipment to be leased for a predetermined period of time based on a command from the CPU when a valid prepaid card has been accepted.

[0007] In a preferred example, the equipment to be leased is an air mattress with an attached air pump. Here, the air pump is housed inside the case, and the case is equipped with a hose fitting to supply compressed air to the air mattress. The equipment leasing device does not have to lease out a single piece of equipment. A

plurality of devices can be leased out at the same time.

[0008] [Embodiment of the Invention]

The following is a more detailed explanation of the present invention with reference to the figures. FIG 1 is a diagram used to explain an air mattress leasing device using a prepaid card which is a working example of the present invention, and FIG 2 is a diagram used to explain the configuration of the operating switches.

[0009] In FIG 1, 10 is a case, 20 is a CPU, 30 is a card sensor, 40 is a card processor, 50 is an operating switches, 60 is a leased device such as an air mattress device, 70 is a power control circuit, and 80 is a prepaid card. The case 10 is cube-shaped and has a front panel 14 on the front side with a prepaid card slot 14a, operating switches 50, and a label describing how to use the device and precautions for using the item. The back side has a connector for the feed line 12, and an air hose fitting 15 of the leased air mattresses 60.

[0010] The CPU 20 is a central processing unit for managing the information in the entire device and controlling the operation of the device. The card sensor 30 is located near the slot 14a in the front surface of the case 10. It detects a prepaid card 80 inserted into or removed from the slot 14a, and sends a detection signal to the CPU 20. The card sensor 30 preferably detects the card directly either using a limit switches or photo electrically. However, the card can also be detected indirectly based on direction of the card feed roller 44 near the slot or via a shock.

[0011] The card processor 40 is controlled by the CPU 20 and is activated when the card sensor 30 outputs inserted prepaid card detection signal. The card feed rollers 44, 44 rotate counterclockwise in the figure via a motor (not shown) driven by the current outputted from the motor power circuit 48. As the inserted prepaid card 80 is taken in from the slot 14a, the data recorded on the prepaid card 80 is read and transmitted to the CPU 20. When the equipment leasing operation has been completed and an operating switch 50 has been pressed, the card feed rollers 44, 44 are rotated clockwise based on a command from the CPU 20. As the prepaid card 80 is returned to the slot 14a, the leasing data is recorded on the prepaid card 80.

[0012] The equipment to be leased 60 consists of an air pump 62 and an air mattress 64. The air pump 62 is housed inside the case 10. The air mattress 64 is divided into several slender air chambers. These air chambers are inflated with air from the air pump 62 or deflated alternately in sequential order. Because the shape of the air mattress is always changing, a recumbent patient is kept from getting bedsores. The operating switches 50, for example, as shown in FIG 2, can consist of a single automatic reset push button switch 52, a two-position push button switch 54, a blue lamp 56 indicating that the device is operational, and a red lamp 58 indicating that an equipment lease is being processed.

[0013] Push button switch 52 is pushed down by the user of the device to cancel an operation and recover the prepaid card 80. When this button is pushed down, the card feed rollers 44, 44 described

above are reversed and the prepaid card 80 is returned to the slot 14a. When the user wishes to lease equipment, push button switch 54 is pushed down once. Current is generated by the power control circuit 70 to activate the air pump 62, which is used to supply compressed air to the air mattress 64. When the user is finished with the air mattress, the push button switch 54 is pushed down once again. The switch is turned off, the current from the power control circuit 70 is blocked, operation of the air pump 62 is suspended, and the supply of compressed air is stopped to the air mattress 64.

[0014] In this working example, the leasing device has an operating switch that can be used to suspend a leasing operation at any time. However, the following configuration is recommended because a leasing device for equipment such as air mattresses is used around the clock. As a result, the following configuration simplifies the /4 device and holds down costs. In this configuration, the prepaid card is a timer card that can be used only once, and the operating switch is eliminated.

[0015] Here, the prepaid card is good for one day or good for one week. When the card is inserted into the device, the card processor reads the time period in which the card is valid. Once this data has reached the CPU and the prepaid card has been returned or recovered, the air pump is activated continuously for a predetermined period of time. Because the air pump remains operable until the time expires, a credit display can be installed on the device to indicate how much time remains. This allows multiple prepaid cards to be continuously

inserted. This configuration is advantageous both in terms of equipment costs and operating costs. Air mattresses can be leased inexpensively, and users can lease equipment with peace of mind. The air mattress leasing device can consist of more than one of the devices shown in FIG 1. In this way, air mattresses are continuously available or other equipment can be leased if necessary.

[0016] In this explanation, the leasing device was an air mattress device. However, other types of equipment can be leased too. Examples include electric massage devices, electric blankets, televisions, radio cassette players, electric cooking equipment, tea kettles, and small refrigerators. It is recommended that the power portion of more than one device be accommodated and that power control circuits and operating switches be installed for them.

[0017] [Effect(s) of the Invention]

With the configuration described above, the present invention is able to lease equipment to patients and health care providers in a timely manner. From the standpoint of hospitals and nursing homes, this device is relatively easy to manage, cannot be robbed of change, and is able to lease out necessary equipment. In other words, this device confers great advantages to these institutions.

[Brief Explanation of the Figure(s)]

[FIG 1] A diagram used to explain an air mattress leasing device using a prepaid card which is a working example of the present invention.

[FIG 2] A diagram used to explain the configuration of the

operating switches.

[Key of the Figure(s)]

10 ... Case

12 ... Feeder Line

14 ... Front Panel

14a ... Slot

16 ... Air Hose Fitting

20 ... CPU

30 ... Card Sensor

40 ... Card Processor

42 ... Base Plate

44 ... Card Feed Roller

46 ... Magnetic Head

48 ... Motor Power Circuit

50 ... Operating Switches

52 ... Automatic Reset Push Button Switch

54 ... Two-Position Push Button Switch

56 ... Blue Lamp

58 ... Red Lamp

60 ... Leasing Device

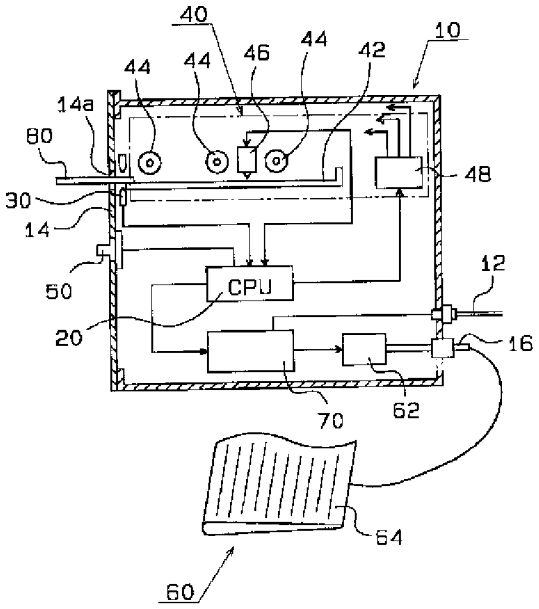
62 ... Air Pump

64 ... Air Mattress

70 ... Power Control Circuit

80 ... Prepaid Card

[FIG 1]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10
44
44
46
44
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14a
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14
12
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CPU
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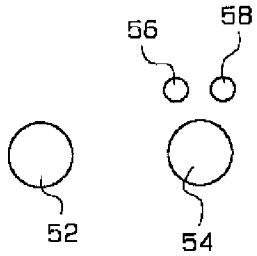
16
70
62
64
60

[FIG 2]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